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**Negotiations in the Pork & Beef Meat Supply Chain
Shifts in Negotiations Due to Extreme Events**

Nikolaos Georgaris

Supervisor: Dr Konstantinos G. Papadopoulos

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Georgaris Nikolaos

Supervising Committee

Supervisor:

Dr. Konstantinos G. Papadopoulos
Department of Economics
Aristotle University of
Thessaloniki

Co-Supervisor:

Athanasia Karakitsiou
Department of Business
Administration
University of Central Macedonia

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Nikolaos Georgaris

Abstract

This thesis aims to present a comprehensive view of the pork and beef meat supply chain in Greece. The thesis includes an in-depth analysis of the major aspects of the meat industry including cold supply chain characteristics, feed and fodder supply, livestock production, the slaughtering process, the meat processing industry, transportation and distribution and finally the price volatility in the meat market. A brief presentation is included regarding major actors in the industry on a global scale.

Furthermore, this thesis aims to present the complex dynamics of negotiations between interacting actors within the meat industry. It includes a presentation of negotiating tools and strategies applied, relationship building between negotiating parties and its importance and finally best alternatives to a negotiated agreement (BATNAS) and their impact on the meat supply chain. This thesis will aim to present shifts in negotiations due to extreme events such as the covid pandemic.

Finally, this thesis includes a research among participants within the sector in order to present valuable insights and a clear comprehensive view of the meat supply chain.

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1.Introduction

Modern meat supply chains are characterized by increased risk, complexity and have gone through enormous transformations, when compared to several years before. Several actors, spread around the globe, connect, interact and compete in order to meet and satisfy market demand. In general, the meat sector can be divided into three major categories: beef, pork and poultry. Other types of meat, with lower consumption volume compared to the three major categories, would apply and follow similar practices regarding their supply chain operation. This dissertation will focus on the pork and beef supply chain.

Companies operating within this vast network have to overcome various challenges and adversities regarding the availability and supply of pork and beef meat at any time and at any place. The latter must be achieved for a viable overall cost and for a reasonable price, while also meeting the required criteria regarding supply chain sustainability, food safety, market and societal expectations. In many cases meat processing companies purchase pork and beef meat from the same suppliers, cooperate with the same intermediaries and share a common customer base (Lambert & Enz, 2017). In order to meet market expectations while simultaneously achieving economic viability and sustainability, Greek meat producers and processors transformed over the last decades from small family farms to large businesses (Nijhoff-Savvaki et al., 2012). Negotiations taking place are one of the key factors on a firm's attempt to maintain its established market share, access new markets and form new alliances while also adding value in the supply chain. Negotiations will determine at a great extent the level of sustainability in the chain and the success of the applied business strategy (Pröll et al., 2022).

2.Characteristics of the meat supply chain

2.1 Cold supply chain

Firstly, the meat supply chain is a cold supply chain characterized by intensive energy consumption levels and a heavy environmental footprint. Distribution systems play a vital role regarding the preservation of safety and quality of meat products while complying with laws and regulations, monitoring and controlling

the storage and transportation management (Awad et al., 2021). Meat is a perishable product with a short life cycle. Therefore, meat supply chain management has to deal with strict regulations, tight and short timelines regarding storage, transportation and distribution. The cold chain should not be interrupted at any stage. All consecutive links must align their efforts in order to ensure the safety and quality of the various meat products that will reach the final consumer, minimizing product waste, through poor handling, and the overall costs. A highly important factor to this extent is the maintenance of the required temperature levels, at all stages of the supply chain, which are defined by government agencies and international organizations (Nastasijević et al., 2017). Indicative storage temperature is 0°C and 4°C for fresh meat products and -18°C for frozen products. At this point we have to highlight the importance of air circulation in the storage units. The maintenance of the appropriate temperature levels during storage and transportation generates a large proportion of the overall logistics costs. Additionally, we must mention the difference in performance levels between industrial and commercial refrigerators. Consumers have to pay attention at the proposed storage and handling guidelines provided for packaged meat products. A meat product's life cycle is consisted of the primary life cycle, the time period the product stays in its package, and the secondary life cycle, the time period after the package has been opened. The expected life cycle of fresh meat products is greatly affected by the material and the method used for their packaging. Thermoplastic polymers such as polyethylene (PET), polypropylene (PP) and polystyrene (PS) are the most widely used packaging materials in the food industry. Furthermore, the application of packaging methods such as vacuum, modified atmosphere packaging (MAP) etc. and the use of preservation technologies, in the meat production and process industry, can significantly expand the primary life cycle of fresh meat products (Soro et al., 2021).

2.2 Stages of the meat supply chain

The meat supply chain consists of many different stages, with several actors of various size and capacity operating within each one respectively. In general, these stages are feed and fodder production and supply, animal breeding, slaughtering, meat processing, transportation and distribution of fresh, frozen and processed meat products and consumption (Ji et al., 2017). Meat processing and slaughtering are the two most industrialized stages. Furthermore, these two stages are very important for the formation and the management of the supply chain, affecting heavily the layout for the preceding and subsequent stages in the chain.

2.2.1 Feed & fodder production and distribution

Fodder production and supply along with feed supplements' production and distribution are highly valuable stages for the overall meat supply chain. These

stages are consisted of crop cultivation, fodder farming, fodder and feed processing, feed supplements' production, feed and fodder suppliers and finally livestock farmers. The digestive structure and the physiological features of pigs and cattle are different, therefore the necessary nutrients for their growth will be different as well as the feed that is used. The feeding plan applied will affect animals' weight gain, animals' health, meat quality and nutritional value (Ronda et al., 2019). Feed supplements and additives are used in order to ensure efficient nutrition, timely and most importantly healthy growth for the livestock and finally enhance the productive functions of animal breeding. The characteristics of the applied feeding plan have a great impact on the overall supply chain. Therefore, nutritionists and livestock producers around the world combine their efforts on the attempt to achieve a diet program, in an intense production process, that will ensure a desirable animal growth reducing the associated costs and minimizing their environmental footprint (Negash, 2022). Feed scarcity and feed quality are the two main factors affecting animal's productive and reproductive performance. The production of the required volumes of grain and fodder for the feeding of livestock population has proven a significant obstacle for the meat supply chain. Limited resources, labor capacity and quality, water scarcity, inadequate irrigation systems, the needed volumes of manure, fertilizers and pesticides for cultivation, technologies applied and the climate change are the main reasons affecting sustainable livestock production (Bekuma, 2019).

The animal feed industry deals with a number of adversities generated by severe inefficiencies in the supply chain management. This affects greatly labor capacity and expenses as well as the overall process costs. Both suppliers and producers struggle when it comes to restocking their feed silos. Efficient stock level, the appropriate time to place a new order, expected delivery time and the associated logistics costs are some of their main concerns. The logistics costs for the animal feed sector are calculated approximately at 2 billion € per year at a global scale. Traditional supply chain management methods cannot meet market demands while the incorporation of new technologies and innovations is an absolute requirement. IoF2020 (Internet of Food) is a project funded by the European Union that will apply and highlight the value of Internet of Things (IoT) solutions towards the digitalization of the animal feed sector aiming for the establishment of optimized logistics costs and a smooth and continuous production process. Finally, we have to mention the attempt to add value in animal feed sector through the use and utilization of residues and organic waste from households and industries. Leftover foods, residues and organic waste can be proved very valuable regarding the transition towards a viable, circular and sustainable bioeconomy system (Klitkou et al., 2019).

2.2.2 Animal breeding

Animal breeding is an inextricable stage to the feed and fodder supply and distribution. The main focus for farmers, producers and scientists has shifted over the years from resource availability, the rates of resources' usage and depletion, to the formation of dynamic system models which will ensure sustainable production. Expected population growth, the increased per capita meat consumption, the heavy anthropogenic effect consisted in the livestock production, resource scarcity, environmental impact, the biodiversity of various ecosystems, economic viability, increased societal demands and concerns are some of the main issues which form the complexity of the livestock production on a global scale and have to be properly addressed (Thompson & Nardone, 1999).

The challenge for the agricultural sector will be to increase its capacity by 60% and more by 2050 compared to its current production dynamic. Additionally, the strategies applied must shift their focus to sustainable production processes with respect to the ecosystem and biodiversity. The condition of grasslands worldwide is directly linked and heavily affecting the performance of livestock producers, especially the performance of smallholders and their survival while traditional management practices have been clearly proven as non-viable (Michalk et al., 2019).

Sustainability can be achieved through increased livestock productivity. The latter can be established by increased animal numbers and increased productivity per animal. Projections show that animal numbers will be still increasing, but at lower rates compared to the past. Increased productivity per animal is expressed through lower take-off rates, the number of animals slaughtered as a proportion of the number of animals held by a livestock producer, faster growth rate and higher carcass weight. In order for all the above to come true more effective feeding practices, better health and genetics monitoring, state of the art technologies and sustainable grazing management are essential. In developed countries this goal will be reached through enhanced performance per animal while in developing countries through larger animal numbers. At this point it should be mentioned that although that problems are global, their solutions have to do with local and regional policies applied. Global meat production is continuously reaching higher volumes and the greatest proportion of it is expected to be covered through livestock production in developing countries (Michalk et al., 2019).

A very important issue regarding livestock production is the green-house gas (GHG) emissions. (GHG) emissions in the meat supply chain include livestock production, feed and fodder production, transportation of livestock and slaughtered animals, meat processing and packaging, distribution of processed meat products, large scale and water intensive farming for both animals and crops. Livestock

(GHG) emissions are caused by the animals' digestion process, responsible for about 65% of total sector's greenhouse gas emissions, and manure management, responsible for 10%-18% of sector's total emissions. Beef and dairy cattle production is responsible by far for the greatest proportion of emissions between ruminants through enteric fermentation. Emissions for monogastric animals, such as pigs, are lower but the relative activities for their feeding and processing contribute significantly to their carbon footprint (Puliafito et al., 2020). Livestock production has the highest growth rate among the agricultural sectors globally. The sector's emissions includes mainly methane (CH₄), carbon dioxide (CO₂) and nitrous oxide (N₂O) (Menghistu et al., 2021).

Lower (GHG) emissions are a major issue for a sustainable livestock production process which can be achieved through the following ways. Improved feed and fodder quality that will lead to an animals' diet plan structure, through their attributes and nutrients, with lower emissions produced by enteric fermentation. More efficient livestock management in order to reduce the proportion of unproductive animals among the livestock population while also producing the same numbers of animals by using less breeders. Better and close health monitoring combined with respect to the animals' welfare. The choice of genetic lines of animals that produce lower methane emissions. It is expected that animal breeding can reduce emissions up to 20% (Beverley, 2009). Improved forage efficiency and quality can lead to a lighter environmental impact. Investments in research and development that will allow the implementation of innovative practices is a big step towards sustainability. Livestock production occupies a great percentage of the agricultural arable land worldwide. In this case although a lighter carbon footprint can be achieved for the animal production sector, there is the possibility of increased greenhouse gas emissions through farming. Another step towards this direction could a shift in human diet with lower meat consumption per capita, especially red meat, and an improved food waste management. Meat loss, waste and disposal emissions are accountable for about 16% of the total food supply chain emissions (Xue et al., 2019). Finally, government policies, regional and global regulatory terms and the participation of governmental and non-governmental organizations are necessary to ensure that actors across the chain will apply strategies and manage their operations towards a sustainable future.

2.2.3. Major actors in the industry

The major beef producing countries worldwide for 2022/2023 are USA (production of 12.89 million metric tons – 22% of global production), Brazil (10,35 million – 17%), China (7,18 million – 12%), Europe (6,72 million – 11%), India (4,35 million – 7%), Argentina (3,14 million – 5%), Mexico (2,18 million – 4%), Australia (1,88 million – 3%), Canada (1,41 million – 2%) and Russia (1,32 million – 2%) (USDA - U.S. Department of Agriculture, 2024). Brazil, USA, India,

Argentina, Canada and New Zealand are among the major beef exporters worldwide (Greenwood, 2021). Within the European Union France, Germany, Spain, Italy, Ireland and Poland are the major veal and beef producers (Official Website of the European Commission, 2024) and the consequently the major European veal and beef exporters along with Denmark, Belgium and Austria. The top ten beef producing companies worldwide are Cargil Incorporated, Danish Crown, St Helen's Meat Packers, Tyson Foods JBS USA, NH Foods Ltd, Marfrig Global Foods S.A., LLC, National Beef Packing Company, Hormel Foods Corporation and Vion Food Group. The major European actors are Danish Crown, Tonnies, Groupe Bigard, Glanbia Group, Vion Food Group, ABP Food Group, Coren Group, Westfleisch, INALCA and Pini Group.

The major pork producing countries worldwide are China with a 48,4% share of total production, European Union, USA, Brazil, Russia, Vietnam, Canada, Mexico, South Korea and Japan. The top ten of pig meat exporters in the world is consisted of the European Union, USA, Brazil, Canada, Mexico, Chile, Russia, United Kingdom, China and Australia (Pig 333, 2024). The major pork producing companies on a global scale are the Muyuan Foodstuff Company Ltd., Wens Food Group Company Ltd., Smithfield Foods, Tonnies, Danish Crown, Tyson Foods Inc, Charoen Pokphand, New Hope, Pipestone System, Sichuan Dekon Group, Triumph Foods, BRF S.A. and Twins Group (Pig 333, 2024). The major pork producing European countries are Spain, Germany, Denmark, Netherlands, France, Poland, United Kingdom, Italy and Belgium with Danish Crown, Vion Food Group, Bigard-Socopa, Tonnies, Westfleisch, SVA- Jean Roze, Pini Group and Jorge being some of the major European actors (Szymańska, 2017). Both beef and pork production recorded a declining performance in Europe for 2023, 3.1% and 6.6% respectively, following the trend of the past few years. Additionally, the prices for the beef and pork meat made exports from the European Union a challenging task (Eurostat, 2023).

The meat industry in Greece is ranked 84th among the country's total number of industries, about 297. The Greek meat processing sector is expected to gain a market share of 673.4 million € in 2024 ranked at the 17th place among all European countries. The sector shows an average growth of 2.4% since 2019. Meat production peaked at 2012 and has a declined performance ever since (IBISWORLD, 2024). Netherlands, Germany, France, Denmark, Spain, Belgium, Poland and Italy are the main suppliers for the meat market in Greece while Italy, Spain and Bulgaria are the main export destinations (INDEXBOX, 2024). Greek meat production is expected to decline by 0.4% per year reaching 428,220 metric tons in 2026 with the industry facing various challenges such as regulatory terms about animal welfare and environmental impact, outdated facilities, succession in family farms, high feeding costs etc. Beef and pork meat production in Greece is

inadequate to cover market demand while on the other hand the prices for Greek beef and pork meat are relatively high compared with the prices of imported meat (Argyriadou et al., 2021).

2.2.4 The slaughtering process

Abattoirs and the slaughtering process have also a huge impact on the meat supply chain. Animal health and welfare, during the breeding stage, as well as various issues regarding meat transportation and slaughter affect its safety and quality as well as the attributes of the final product. The significance of meat inspection has been established over the past decades and its scope covers a great range of issues. Globalization adds more complexity to meat supply chain while simultaneously there is a great risk of unfair competition practices, unethical production processes and food fraud. This is why control tasks and regulatory terms considering meat hygiene, meat quality and meat inspections during the slaughter process are very important (Ninios et al., 2014).

The constantly growing consumption of meat has led to an increased number of slaughtered animals worldwide. Larger number of animals have been slaughtered in a smaller time period, affecting animal welfare and meat quality in a clearly negative manner. Inappropriate animal handling before slaughter increases their stress levels, leading to metabolic and hormonal changes in the muscles of the living animals. Consequently, this leads to alternated characteristics for the slaughtered animals, a shorter shelf life for meat products, increased consumer concern and significant economic losses. The post slaughtering stage can also generate similar issues through ineffective management and handling (Loredo-Osti et al., 2019). Increased consumer concern for animal welfare has led all major actors to comply with laws and regulations and apply practices with respect for the animals' well-being. They incorporate such practices to the corporate policy and share them with the general public.

Almost 50% of the slaughtered animal is considered slaughterhouse waste. This consists of blood, bones, inedible tissues, organs, intestines, ligaments, tendons etc. Slaughterhouse waste is mainly used for the production of animal feed and fertilizers. Furthermore, slaughterhouse waste materials can be used for the production of biodiesels or as raw materials for other industries such as the furniture and pharmaceutical industry. The proper handling and utilization of slaughterhouse waste is a costly process but it can also generate economic benefits. Improper disposal of inedible animal parts and animal blood produces a heavy environmental impact and various constraints regarding sustainability (Kayikci et al., 2020). In order to ensure meat safety, hygiene and quality and the implementation of practices with respect to animals' health and welfare a global regulatory spectrum is absolute necessary. Laws and regulations at a regional,

national and international level set the boundaries and guidelines for the applied practices regarding animal breeding and slaughter. Correspondingly, all interacting parties have adapted their legislation in order to incorporate global laws and principles (Nagel-Alne et al., 2022).

All major companies operating in the meat sector have their own slaughterhouse facilities, commonly spread to various locations in correspondence with their supply chain and distribution network. Abattoirs providing services to smaller actors is very common in the sector. Due to the perishability of meat the slaughterhouse process has to be smoothly linked with the other stages of the supply chain in order to ensure a continuous and uninterrupted flow. The slaughtering process for every major company in the sector will be tightly and thoroughly planned and monitored. There will be a clear plan regarding the management of every product and byproduct generated in the slaughterhouse (destination, handling instructions, packaging instructions, further processing etc.). This is not the case for smaller actors and abattoirs. The slaughterhouse of a smaller actor will operate in order to cover a specific need (a specific amount of meat cuts like shoulders, loins etc.) and everything else will be processed at a later time span. For a major company in the meat industry as soon as the slaughtering process is over, the processing and packing of the slaughtered meat takes place. Slaughtered animals may be sold and transported in halves or quarters, packed and labeled in specific cuts and stored and shipped either raw or frozen.

2.2.5 Meat processing stage

Animal slaughter is the first stage of the meat processing industry. After the slaughtering process, blood and inedible parts will be removed and will be further processed and handled. Raw meat will be inspected and separated into various cuts which are now marketable products and ready for consumption, or will be further processed for the production of animal origin food. Meat cuts will be packed and stored in order to maintain freshness. The packaging method of a meat cut varies according to the purpose and the specific need it has to serve. Meat will be packed and stored in a way that will ensure its further processing, in the factory facilities, or it will be packed and shipped fresh or frozen to wholesalers, distributors and retailers until it is available to the final consumer. Meat can be further processed, beyond slaughtering and deboning, in order to have new products such as sausages, burgers, minced meat etc. Pre-cooked meals is also a rapidly growing market (Ortega-Rivas, 2014). Products that derive from meat processing consist of fresh meat products, frozen meat products, processed animal origin food like sausages and burgers, pre-cooked meals, marinated, seasoned and specialty products with added value, pet food, rendering and meat byproducts after the extraction of fats and proteins. Meat processing techniques such as curing, smoking, ripening, fermentation and dehydration aim to enhance its color, tenderness and flavor, extend its shelf life and its life-cycle and offer value added products to the final

consumer (Toldrá, 2023). Meat processing transformed over the years and shifted from traditional processes in small farms to intensive industrial production. Conventional processing and preservation methods are outdated and the use of novel technologies is an absolute necessity. Such technologies are high pressure processing, ohmic heating, electrical stimulation, shockwave technology, pulse electric fields, cold plasma technology etc. The benefits of these methods have been clearly defined as well as the efficiency of their application on industrial environment. A major drawback is their installation cost (Sandesh Suresh & Kudre, 2022).

In general, there are two types of techniques that can be applied in meat processing, physical and chemical modifications. Physical modifications such as dry curing, conventional and vacuum cooking, dry aging thermal treatment and high-pressure processing refer to sensory characteristics, such as appearance, color, taste, aroma etc., affected by changes in the structure of meat tissues. Chemical modifications such as curing, smoking, marination and fermentation are generated through the use of food additives, spices, essential oils and plant extracts. The application of natural additives instead of the synthetic ones is getting more and more accepted over the years. Both approaches ensure food safety and satisfy market demand without affecting the product's nutritional value and with respect to increased social and consumer concern (Gómez et al., 2020a). The excessive use of water for the cleaning of carcasses, work stations, facilities and personnel hygiene, the energy needed for the refrigeration, processing and storing of meat products, fuel and energy consumed for transportation and distribution and solid waste from packaging materials contribute to the industry's carbon footprint (Maria Kanta, 2019). The general NACE (Nomenclature of economic Activities) codes for the meat processing products in Europe are 10.13 and 10.20. NACE is European system used for the categorization of economic activities (European Commission, 2024).

Packaging and labeling are two crucial aspects for the meat processing industry with their focus on meat safety, quality and traceability throughout the supply chain. Traditional packaging techniques are air-permeable packaging, vacuum packaging and modified atmosphere packaging (MAP). Air-permeable packaging allows the controlled and at low volumes exchange of oxygen and carbon dioxide between the packaged product and its surrounding environment. This method ensures the preservation of meat's natural color, extends its shelf life and delays microbial growth. In vacuum packaging air removal from the package slows down microbial growth, protects meat from unpleasant smell and taste and extends its shelf life. The problem with vacuum packaging is color stability. Modified atmosphere packaging adjusts the composition of nitrogen, oxygen and carbon

dioxide in order to prevent product's degradation and maintain its natural color and freshness (Gómez et al., 2020b).

Innovative methods applied in the meat processing industry are active packaging, smart packaging and the use of edible films and coatings. Active packaging systems incorporate agents in the packaging which control moisture, absorb excess oxygen and prevent microbial growth. Smart packaging systems use technologies in order to monitor the condition of the packaged meat products and communicate the relative information. Edible films are of animal and plant origin. They have an improved performance, compared to the synthetic ones, regarding moisture and gases composition. On the contrary they underperform when it comes to functional and mechanical attributes of synthetic films (Gómez et al., 2020).

Finally, we must highlight the importance of labeling of packaged processed meat products regarding traceability and transparency throughout the supply chain. According national and international regulations, besides information regarding the production date and expiration date, the compulsory components of a meat product's label are accurate product description, brand of the packer and producer, plant number and location of the packer and producer, net weight, list of ingredients, the meat inspection legend, handling and storage instructions. Additional information can be nutritional value, promotional information, cooking instructions, allergen information, animal welfare statement, company's contact information, awards, quality certifications, statements regarding the company's environmental concern and the application of eco-friendly sustainable practices (Cegielca, 2020). All the above provide important information to satisfy consumer concern and demand while also allow all participating actors to have access to information regarding meat's origin, production process and the processing methods applied.

2.2.6 Transportation and distribution

Chilled and frozen meat products are transported worldwide by land, air and sea. Developments in the applied storage and handling technologies regarding temperature control and monitoring, have made possible the interaction between actors worldwide. For example, meat markets like Australia and New Zealand are now more easily accessible to European countries. Of course, for transportations of this such long distances we are only talking for frozen products. A very significant factor for international transportation is that all meat products must be at the appropriate temperature levels before loading and distribution. The majority of transportation containers are designed and build incorporating technologies that allow them to retain the desired temperature levels for the loaded cargo and not to decrease heat from it (James & James, 2014).

The constant need over the past decades for meat and meat products preservation during transportation by sea led to innovative solutions and technologies for mechanical refrigeration. The latter, combined with novel achievements in meat processing and packaging, like controlled and modified atmospheric packaging, transformed the international trade of products for the meat industry. For transportation by sea there are used insulated or refrigerated containers, which are usually electrically operated. Most containers used for international transportation comply with International Organization for Standardization (ISO) standards are fully loaded and their capacity is up to 26 tons. The better monitoring and control for the loaded cargo's temperature can be achieved with the placement of containers in insulated holds and their connection to the ship's refrigeration system. Refrigerated containers have a better operating performance and are preferred for overland transportation (James & James, 2014).

Transportation of chilled and frozen meat products by air has gained a lot attention and has turned into a crucial factor for the meat supply chain. The most important factors are cargo's temperature management, the applied packaging methods, regulatory compliance, proper labelling and veterinary certificates. Meat products are highly sensitive on temperature fluctuations, as they can lead to various problems (product degradation, bacterial growth etc.). Airfreight carriers utilize novel technologies that enable temperature monitoring and adjustment based on real-time temperature information. Their design and build incorporate advanced insulation materials without allowing temperature exchange with external factors and the external environment, even under extreme conditions. Active packaging, modified atmosphere packaging, insulating packaging, reflective films and barrier films are used in order to control cargo's temperature and prevent smells and moisture penetration into the packaged products (Nadasan, 2023).

Overland distribution systems utilize refrigerated containers for the long-distance movement of chilled and frozen meat products through road or rail transportation. The majority of these containers are mechanically refrigerated. Smaller vans are used for local distribution, either to retailers or even to consumers. Sometimes, meat cuts are loaded warm, right after the slaughterhouse. Rail containers have proven to overperform road containers when it comes to reducing the temperature of meat products that are loaded warm. The refrigeration systems utilized for road transportation are mechanical cooling, liquid nitrogen and eutectic plates. Mechanical units are very common for trucks or trailers through road transportation. They use petroleum from the truck's tank in order to operate and in many cases, they equip an extra electric motor for standby use, for example when the truck is parked on a ferry. Liquid nitrogen technology is very common for the road transportation of meat products which require extremely low temperatures. These systems utilize high quality insulation materials, convert liquid nitrogen to

gas nitrogen and circulate the latter through the refrigeration system. Eutectic plate systems are used for local distribution networks. The plate gets frozen overnight on a static condition from the vehicle's refrigeration system. During distribution the desired temperature is achieved from the melting of the eutectic plate with no additional energy required. In each case free and smooth air circulation the refrigeration system is vital (James & James, 2014).

The transportation of meat and meat products worldwide is accounted for approximately 25% of all green-house gas emissions. Through conventional sector practices the use of trucks with controlled temperature compartments, for the transportation of chilled and frozen meat products, is responsible for a large proportion of the emissions caused by the meat producing and processing sector. Minimizing emissions through meat transportation is a huge step towards establishing supply chain sustainability (Rossi et al., 2021).

In the case of Greece sea and road transportation are the most common distribution methods applied, with road transportation and the use of trucks with refrigerated containers being the most extensively utilized. Rail and air transport may be utilized for long-distance transportation, with the relative costs being significantly high. Most of the imports are from European countries with Netherlands, Germany, Spain, France and Denmark being the major suppliers for the Greek market. Major European actors have more than one slaughter facilities spread on various locations over their distribution network. A common practice in the sector is that each major European actor has a representative in Greece with whom Greek companies communicate in order to arrange various aspects such as ordered quantities, prices, payment terms, delivery schedules, expected quality, report problems of any nature etc. The latter does not exclude direct communication with a supplier. When dealing with a major European actor, a Greek company is overburdened with transportation cost and the transportation method. Smaller actors may absorb transportation cost and use their own fleet for distribution.

Greece's supply chain network consists of wholesale distribution, retail distribution including super markets, butcher shops etc., restaurants, hotels, grill houses, catering services and others. The complexity of the network and the related risks involved highlight the importance of transparency over the supply chain and the application of safety and quality practices, always in compliance and respect to national and international regulations. The partnership with major actors provides the assurance to Greek companies of a smooth and undisrupted flow in the supply chain with full, on time deliveries of the ordered quantities, traceability and transparency over the entire network, immediate communication and collaboration in case of any problem arises. A factor which enhances complexity in the sector is

that major and smaller Greek actors share a common supplier base as well as a common customer base.

2.2.4 Price volatility

The prices of agricultural products tend to be more volatile, when compared to other products, due to seasonality, perishability and production uncertainty. Increased price volatility and price fluctuations generate increased risk and uncertainty in the meat supply chain regarding its response and performance. Price volatility in the meat market is asymmetric, different recorded volatility generated from a price increase or decrease of the same volume, providing important information regarding shifts of power in the meat market and affecting negotiations between the participating actors. Positive asymmetric volatility means that actors can benefit from changes in the meat market by instantly increasing their prices in case of a positive shock while they would be able to delay price decreases in case of a negative shock. Negative asymmetric price volatility means that actors cannot from positive shocks in the market by immediately increasing their prices while in case of negative shocks they would have to decrease their prices instantly (Rezitis & Stavropoulos, 2009).

Price volatility can be affected by various aspects, dictating financial changes to both demand and supply sector and with an immediate impact on all participating actors. Such factors can be feed and fodder prices affected by weather conditions and fluctuations in commodities' prices, livestock prices, weather conditions like extreme temperatures or floods, currency exchange rates, national and international laws and regulations, shifts in consumer demand, diseases outbreaks affecting livestock prices, novel technologies affecting production capacity, societal concerns, environmental factors, changes in trade policies, geopolitical events, supply chain disruptions and extreme events such as the covid pandemic or the war in Ukraine. All the above factors are unpredictable, highly interconnected and stress the meat supply chain testing its resilience and flexibility. Governments, policy makers and all participating actors are responsible for creating a stable environment establishing the undisrupted operation of the supply chain (Utnik-Banaś et al., 2022).

3. Shifts in negotiations due to extreme events

The complexity of the global meat market and the various interactions within this vast network, are supported by the performance of the supply chain. The resilience and flexibility of the chain are crucial for a smooth and undisruptive flow and have

proven to be the major factor towards a sustainable future. New market trends, societal concern, technological achievements, novel processing and packaging methods, changes in consumer demand and unforeseen disruptive events are constantly testing, stressing and reshaping the supply chain. Disruptive events can be natural disasters, geopolitical uncertainties and disease outbreaks of small, medium or large scale (Katsoras & Georgiadis, 2022). The past years the covid pandemic and the war in Ukraine were two extreme events which had a major impact on the global supply chains affecting various aspects.

3.1 The Covid-19 pandemic

Livestock production and the related to it industries, were among the most affected sectors by the covid pandemic. Firstly, there were constraints regarding animal movement, feed and fodder supply and production, border crossing limitations, the purchasing power of production logistics, shortage of workforce and various professional services. All the above had a major economic impact for the livestock sector while additionally production efficiency significantly decreased. Pork production was the most affected meat sector due to the simultaneous occurrence of the African swine fever (ASF). Several abattoirs and meat processing plants had to shut down production worldwide leading to a significant production capacity decline. Findings, based on scientific studies, that lead to the conclusion that farming animals were potential Covid-19 hosts made the situation even more complex. Furthermore, the disrupted operating performance of several production processes and veterinary services generated various constraints regarding daily farming activities and severely affected animal welfare (Hashem et al., 2020).

During the covid pandemic there was recorded a historic rise regarding the spread of meat prices between the livestock and the wholesale sector. There were several allegations and accusations about anticompetitive behavior and unethical practices which consequently lead to civil suits and inquiries. Meat products and the related industries gained a lot of extra attention during the coronavirus outbreak. Simultaneously, livestock prices and supply were decreasing while retail and wholesale prices were increasing. Meat processing plants and abattoirs were operating below their physical capacity, in some cases there were recorded production reductions of 40%, causing extraordinary volatility for the meat and livestock prices. At the retail sector the situation was way more complex due to the broad variety of products, access to alternative markets etc. Meat processing plants and abattoirs closure resulted to an excess supply of livestock production, which could not be processed at the time, and a fall to livestock prices and demand. On the other hand, plant and abattoirs closure resulted in decreased production and processing volumes and less meat products reaching the final consumer. This lack in processed meat supply combined with market needs, led wholesale and retail prices to increase (Lusk et al., 2021). Finally, consumer's purchasing patterns

transformed during the pandemic and shifted from initial increased demand and panic buying towards lower-priced products combined with a bigger shelf life (Ellison et al., 2021).

As mentioned above the meat processing industry was heavily affected by the coronavirus outbreak for various reasons. Firstly, there was a lack of workforce due to the implied lockdown policies, in several countries worldwide. Additionally, the proportion of personnel affected by Covid-19 led many meat processing plants to slow down or even shut down production lines. At the first stages of the pandemic, employees in Greece who were covid positive would stay in quarantine for at least two weeks. This was a major constraint as production process requires the physical presence of workers. Restaurants, stadiums, grill houses and various other venues were closed due to safety protocols, leading to less demand for processed meat products. Local, regional and national transportation restrictions resulted in less meat quantities reaching the processing plants. The accessibility to the global market was severely constrained. Increased retail prices combined to the deteriorated, during the pandemic, consumers purchasing power also had a major impact on the production capacity of meat processing plants (Whitehead & Brad Kim, 2022).

Major actors in the meat supply chain, such as supermarkets, rely for their operations on a just in time distribution system and require a smooth, uninterrupted flow and continuity within the chain. Meat products must be continuously moved, quickly and at the proper quantities, between all interacting nodes in the chain. As proven the global meat supply chain was not ready to address the arising challenges due to the covid pandemic. Transportation companies faced workforce shortages as many drivers had to spent several days in quarantine as being covid positive. Movement restrictions and changes in trade policies affected significantly the international meat trade, making accessibility to the global market more difficult. Major delays were recorded in loading and unloading in ports and distribution centers while transportation costs were dramatically increased. Any delay and disruption in the cold supply chain of meat products compromised their safety and quality. Regulatory compliance and the nature of the pandemic added many challenges and complexity in vehicle routing and transportation planning (Lurleen Waters, 2020). Local and regional food supply chains proved to be resilient and agile during the covid pandemic. Smaller chains allowed buyers and distributors to create closed, personal relationships and benefit from community network in order to establish a smooth supply chain flow (Thilmany et al., 2021).

4. Negotiations in the meat supply chain

4.1 Negotiations among various actors

The pork and beef meat supply chain in Greece, as part of the global meat supply, consists of various actors and incorporates high complexity levels and several constraints. Each one of the participating actors has to play a very important role in the establishment of sustainability throughout the chain. Firstly, we have the negotiations of livestock producers with their interacting parties. They engage in negotiations with feed and fodder producers and distributors, veterinarians and nutritionists. The related negotiations concern animal breeding, animal welfare, efficient production and timely fattening of healthy pork and cattle and incorporate prices, payment terms, bulk purchases and delivery options and schedules (Prodromos Prodromidis, 2020). At a consequent stage of livestock breeding, producers will negotiate with abattoirs and meat processors. In several cases producers, partner with specific abattoirs with their focus on the establishment of food, safety and quality practices. Additionally, meat processors have in many cases their own slaughtering facilities and negotiate the purchase of living animals. Negotiations involve prices per living animals and carcasses, carcass weight. Livestock volumes over specific time periods etc. Finally, livestock producers engage in negotiations with financial institutions regarding financial support and government agencies regarding applied policies and regulatory compliance (Tsapi et al., 2022).

Meat importers and exporters are a crucial actor regarding continuity and uninterrupted flow in the supply chain. They engage in negotiations with foreign and local processors regarding product specifications, imported/exported volumes, prices and payment terms, regulatory terms, exclusivity, delivery schedules and potential long-term partnerships. They negotiate with domestic retailers and wholesalers regarding product prices, supply contracts, partnership formations, promotional and marketing support. They negotiate with logistics and transportation providers regarding prices, transported qualities, transportation cost, delivery points, shipping routes and schedules. They interact with government authorities and customs authorities regarding tariffs, required documentation and regulatory compliance. Finally, they negotiate with financial institutions and insurance providers in order to establish financial support and mitigate risk for the transported cargo respectively (Kaditi, 2012).

Meat processing industries are the major actors in the Greek meat supply chain. Firstly, they negotiate with livestock producers and abattoirs, if not own their individual facilities, regarding prices, animal age and weight before slaughter, carcass weight, expected volumes and delivery schedules. In many cases meat

processing companies may possess their own livestock fleet so they engage in the related negotiations. They negotiate with wholesalers and retailers regarding prices, supply contracts, exclusivity, expected quantities and quality, price, promotion support and the distribution network. Traceability and transparency are very important for the overall view and control over the supply chain. They negotiate with technical industries regarding the implementation of new technologies, maintenance and company infrastructure development. They negotiate with importers/exporters regarding prices, volumes commitment, product specifications, required documentation, shipping volumes and shipping schedules. As mentioned before Greek meat processors negotiate with transportation providers regarding the associated costs and issues. They engage in discussions with customs and government authorities about regulatory compliance as well with quality assurance and inspection agencies regarding quality assurance practices and certifications. Negotiations with financial institutions are also very common for the sector involving financial support and stability. Finally, negotiations with packaging materials suppliers are very important for the meat processing companies, having a major impact on the quality and attributes of the offered products and services.

Wholesalers and retailers engage in a various range of negotiations. Their focus is shifts towards prices, payment terms, supply contracts, expected volumes, delivery timeline, food safety practices, quality assurance, regulatory compliance, ethical production processes, distribution and transportation cost, regulatory compliance, financial support, formation of partnerships and seek to increase their market share through intensified competition (Causil & Morais, 2023). They engage in negotiations with meat processors and distributors, logistics providers, financial institutions, government agencies, quality assurance agencies etc.

Finally, logistic companies negotiate with all related actors and play a very important role facilitating smooth uninterrupted flow in the chain. The negotiating issues involve freight contact for meat products to distribution and processing facilities. Transportation modes, loading/unloading locations and optimal shipping routes. Supply chain visibility with on time information concerning tracking, traceability and integration with interacting parties' ERP systems. Proper documentation regarding customs clearance and compliance with local, regional, national and international regulations. Risk mitigation through liability coverage and cargo insurance.

4.2 Shifts in negotiating power and best alternatives to a negotiated agreement (BATNAS)

Negotiating power has to do with various dynamics regarding the environment in which the interacting parties operate. Market conditions and fluctuations in demand and supply play a pivotal role determining the context under which the negotiation

process will take place. The kind of relationship between the interacting parties as well their size affects the negotiating tools and strategies applied. The negotiating issue is also very important and has a major impact on an ongoing negotiation process. Each party's individual short-term and long-term goals and interests are also very significant. Economic conditions formulate the power buyers and sellers have and the way they operate. Expected demand, quantities and quality as well new market trends, technological achievements and societal demand affect the relationships between interacting actors. Finally, trade policies, national laws and international regulations dictate market conditions and the negotiations process. Unforeseen events such as disease outbreaks and national disasters also are an important factor.

Building long-term relationships and strategic partnerships is vital towards ensuring high operating performance levels and addressing adversities and complexity within the Greek meat supply chain. The latter is something that participants in the questionnaire supported to a great extent. Every organization seeks to create the appropriate conditions that will increase its strength, improve its infrastructure and operating performance. The latter is something which will consequently lead to increased negotiating power, when interacting with various actors within the meat industry (Rosales et al., 2019). Furthermore, organizations must also always have alternative ways of action, even if they are not much preferable, in case their standard operating practices will not lead to the desired outcome or in case of an emergency. Best alternative to a negotiated agreement is very important for Greek companies within the meat industry and affect the leverage they hold in a negotiations process.

Several factors enhance complexity within the Greek meat industry. Firstly, it is a well-established fact that major actors supplying the domestic market share a common customer base. For example, big supermarkets like AB BASILOPOULOS, SKLAVENITIS etc., spread their demand needs to all major actors in the Greek meat processing sector, forming long-term relationships without exclusivity. Additionally, all major Greek actors cover their needs by having the same suppliers. Companies like Vion Food Group and Danish Crown supply the majority of the Greek market. Another factor affecting complexity within the chain is common sector practices. For example, a meat processor supplying a major super market is obliged to hold the appropriate inventory in order to cover not only their customers' expressed needs and any possible excess in demand which can come up for various reasons. Finally tight time schedule is a factor significantly increasing sector adversities. Pigs which are slaughtered in a major processor's abattoirs have to reach a Greek company's facilities within 3 days and at the requested amounts, in order to be properly processed and maintain the desired shelf life.

All the above were mentioned in order to highlight the importance of credible suppliers for a meat processing company. All major European processors supplying the Greek market have major production capacity, apply food safety practices, comply with laws and regulations, offer visibility and transparency over the supply chain and have proven to be reliable under various circumstances. Expanding its supply network and partner with new actors is always a strong alternative for an organization no matter the sector in which it operates. But this something which includes many risks. It is very difficult for a smaller processor to reach credibility level and production capacity of a major actor. Any disruption in the supply chain may have serious, even catastrophic, consequences regarding delivery delays, quantities received, quality issues etc. Even it can be relatively costly, a new supplier has to thoroughly monitored and inspected before a partnership is formed.

Openings to new markets are also an important alternative. When a company feels that can no longer benefit from an ongoing relationship it can shifts its focus to exploring new market dynamics. For example, can seek partners in the neighboring countries instead of the international market. Turning to a new market following new trends in consumer demands is also an option.

A company can invest in new technologies applied in the production process with its focus to constantly increasing environmental and societal demands. They may collaborate with various actors towards that direction and communicate their efforts and goals for sustainable production with regard to environment protection to the general public. This is an attempt to comply with recent expectations and gain the market share with the specific concerns.

A company may seek to form partnerships with targeted customers or suppliers. Relationship building with a sector's major actor can be a statement in the market and the key to reach new markets, expand market share, increase customer base and even change the company's operational structure. On the other hand, as identified by the questionnaire, participants valued significantly building relationships with well established actors in the sector.

A company may decide to invest to in house transportation when outsourcing can be problematic. An organization can decide to change its operational structure by applying novel technologies regarding meat processing and packaging. All these processes are extremely costly and rather difficult to apply requiring a lot of time and effort. Finally, companies can invest to offering value added, innovative products and services that will make them overcome competition and be profitable.

5. Research about negotiations in the pork and beef supply chain in Greece

5.1 Analysis of the questionnaire's results

This analysis aims to provide an overview of the gathered questionnaire's results. The study involved 38 participants who answered several questions regarding the sector in which they operate, their organizational position, negotiating power, negotiation style and tactics, the impact of extreme events such as the covid pandemic and finally negotiation strategies. Hopefully, the study will provide a clear view and better understanding of the pork and beef supply chain in Greece, the formulation of negotiating strategies and shifts of negotiating power within the meat industry.

Supply Chain Nodes:

Question 1 aimed to identify the participants position in the meat supply chain. The majority belongs in the meat processing industry with 50%. Distribution and livestock production follow with 23.7% and 13.2% respectively. Furthermore, 5.3% operate in the feed and fodder production and distribution sector, 5.3% were consumers and 2.6% operates in the animal nutrition sector. The results indicate a significant representation of the meat processing industry.

Organizational Position:

Question 2 aimed to identify the department in which the participants operated within the organization they belong to. Based on the participants responses 47.4% belongs to the sales department, 36.8% belongs to the purchasing department while several participants belong to various departments such as quality control, technical department, production department and the breeding department with 2.6% for each one respectively. The results indicate a significant representation for the sales and purchasing department.

Negotiation Topics as a Seller:

Question 3 aimed to identify which are the main negotiation topics when the participants negotiate with their customers. The participants were asked to provide up to 3 answers. The results showed that the main negotiation topics were price and payment terms with 81.6%, expected quantity with 52.6%, expected quality with

50% and delivery terms with 42.1%. Other topics were regulatory terms with 13.2% and exclusivity with 18.4%. The results identify the importance of the financial aspect, the importance of the expected quantity and quality as well as the significance of the delivery terms. We should highlight the responses that exclusivity gathered because this aspect can strongly affect an organization's goals and its negotiating strategy.

Negotiation Topics as a Buyer:

Question 4 aimed to identify which are the main negotiation topics when the participants negotiate with their suppliers. The participants were asked to provide up to 3 answers. The results showed that the main negotiation topics were price and payment terms with 89.5%, expected quality with 78.9%, delivery terms with 47.4% and expected quantity with 39.5%. As in the previous question price and payment terms are identified as the major topic. The results showed that when the participant negotiates with his suppliers, values more the expected quality and the delivery terms, compared to the negotiations with its customers. We can also see that exclusivity is not so highly valued as in the previous question.

Negotiating With an organization of a Smaller Size:

Question 5 aimed to identify how does the negotiating power shift towards the participants' direction when they negotiate with an organization of a smaller size. The majority of the responses showed that the negotiating power shifts towards their direction with 63.2%. 23.7% responded that there is no shift in the negotiating power while a small proportion identified a shift of power towards their counterparties with 13.1%.

Negotiating With an Organization of a Bigger Size:

Question 6 aimed to identify how does the negotiating power shift towards their direction when negotiating with an organization of a bigger size. The majority of the responses showed that the negotiating shifts towards their counterparties' direction with 42.1%. 39.5% responded that there is no shift in the negotiating power while 18.4% responded that the negotiating power shifts towards their direction. The responses that gathered regarding no shift in the negotiating power could possibly indicate a long-term partnership and a strong relationship with the participants' counterparty or that the participant could be a major actor in the meat industry.

Negotiations' Frequency:

Question 7 aimed to identify how often does a participant negotiates with its long-established partners. The majority of answers was few times per month with 31.6%, several times per week with 28.9% and few times per week with 26.3%. A smaller proportion of the participants responded that they engage daily in negotiations with

13.2%. The almost evenly distributed answers between few times per month, few times per year and several times per week are possibly linked to the kind of relationship between the participants and their partners or could be possibly related to the conditions under which each one of the organizations, that the participants belong, operates.

Negotiations' Risk:

Question 8 aims to identify how risky would be for the participants to adopt a more aggressive negotiation strategy with a long-established partner. The majority of the responses indicates a moderate risk increase with 52.6%. 34.2% considers this approach very risky, while a smaller proportion believes that an aggressive approach does not generate any risk with 13.2%.

Concessions:

Question 9 aims to identify which concessions are the participants willing to make in order to maintain cooperation with a long-established partner. The majority of answers were payment terms with 63.2%, price with 60%, delivery terms with 52.6% and ordered quantity with 50%. The responses indicate how much valued is long-term relationship with a supplier or customer that the participants are willing to concessions in crucial negotiating issues. Responses also indicate that minority of the participants is willing to accept a lesser quality product.

Supplier's characteristics:

Question 10 aims to identify which are the main characteristics participants seek in a new supplier. The participants were asked to provide up to 3 answers. The majority of the responses were quality assurance and food safety practices with 81.6%, market reputation and credibility with 60,5% and consistency and production capacity with 57.9%. The answers highlight the supplier's importance for an organization. Effective communication and responsiveness and transparency and traceability followed with 44.7% and 39.5% respectively.

Customer's characteristics;

Question 11 aims to identify which are the main characteristics participants seek in a new customer. Participants were asked to provide up to 3 answers. The majority of responses were financial stability, payment terms and conditions with 89.5%, potential long-term relationship and increased market share with 63.2% and market reputation and credibility with 47%. Responses highlight the importance of a credible, financial healthy customer who is well respected in the meat market. Expected demand volumes and communication and collaboration follow with 44.7% and 34.2% respectively.

Strategic approach in case of a negotiation breakdown:

Question 12 aims to identify which negotiation strategy would participants adopt in case of a possible negotiations' breakdown. The majority responses were to seek common ground and highlight the mutual benefits of an agreement with 52.6% and being ready to act accordingly your best alternative to a negotiated agreement with 34.2%. The responses highlight participants will to have a positive outcome through negotiations.

Take it or leave it offer:

Question 13 aims to identify how often participants make a take it or leave it offer when negotiating. The majority responses were that it depends on the importance of the negotiating issue with 57.9%. 34.2% of the participants responded that it depends on the importance of the negotiating partner and 7.9% responded that they never make such an offer. None of the participants identified a take it or leave it offer as a common negotiating practice.

Negotiating power during the covid pandemic:

Question 14 aims to identify how the participants' negotiating power was affected by the covid pandemic. The majority of the participants responded that their negotiating power was not affected by the covid pandemic with 50%. 31.5% of the participants responded that their negotiating power was increased during the pandemic while a 18.5% responded that it was decreased.

Negotiating power:

Question 15 aims to identify which factors participants consider that will increase their negotiating power. Participants were asked to provide up to 3 answers. Relationship building and strategic partnerships with 78.9%, market reputation with 57.9% and the participants ability to offer a broader variety of products or services with 50% were the majority of responses. Production capacity combined with company infrastructure and participants ability to hold more leverage by having strong alternatives in case of a negotiation breakdown followed with 42.1% and 34.2% respectively. Once more the importance of strong relationships and the formation of strategic partnerships are considered crucial.

6. Conclusion

In conclusion this dissertation explored and presented the pork and beef meat supply chain in Greece. The study focused on providing a comprehensive view and understanding of the various actors and stages within the meat industry as well as common sector practices. All the above contributed to present a clear view regarding the factors which form the operating environment and add complexity to the chain.

It is clear throughout this dissertation the important role of negotiations towards a resilient and sustainable supply chain. Feed and fodder producers and distributors, livestock producers, abattoirs, meat processing industries, wholesalers, retailers and logistic providers engage in various negotiations. Negotiation topics are price and payment terms, expected quantities, expected quality, delivery schedules, supply volumes and regulatory terms.

Various challenges and opportunities arising from the negotiating process as well as negotiating tools, approaches and strategies and alternative ways of action are also highlighted within this dissertation. Finally, a research study was conducted with a questionnaire addressed to various participants within the meat sector. Based on the findings several recommendations can be made in order to improve negotiations efficiency within the Greek meat supply chain.

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Appendix A: Questionnaire regarding the role and importance of negotiations in the meat supply chain.

Negotiations in the pork & beef meat supply chain in Greece. Shifts in negotiations due to extreme events.

I kindly request your participation in a brief questionnaire that will take approximately 3-4 minutes of your time. Your valuable insights will contribute significantly to advancing our knowledge in supply chain management, especially in negotiations within the meat industry.

Rest assured that your responses will remain anonymous and confidential. Your participation will greatly impact the findings of this study.

Thank you for considering this request.

Your assistance will be highly appreciated. If you have any questions feel free to contact me. If you wish you can receive a link with the findings of the study in about one month.

1. In which node of the meat supply-chain do you belong to? *

- Feed and fodder production & distribution
- Livestock production
- Meat processing industry
- Distribution
- Άλλο...

2. In which department of your organization do you belong to? *

- Purchasing Department
- Sales Department
- Άλλο...

⋮

3. When you are a seller, which are the main negotiation topics with your counterparties? *
(Please choose 3 options maximum)

- Price and payment terms
- Expected quantity
- Expected quality
- Delivery terms
- Regulatory terms
- Exclusivity
- Άλλο...

⋮

4. When you are a buyer , which are the main negotiation topics with your counterparties? *
(Please choose 3 options maximum)

- Price and payment terms
- Expected quantity
- Expected quality
- Delivery terms
- Regulatory terms
- Exclusivity
- Άλλο...

⋮

5. On a scale 1 to 5 , with 1 being slightly and 5 being significantly : When negotiating with an organization of a smaller size how much does the negotiation power shift towards your direction? *

	1	2	3	4	5	
Slightly	<input type="radio"/>	Significantly				

⋮

6. On a scale 1 to 5, with 1 being slightly and 5 being significantly : When negotiating with an organization of a bigger size how much does the negotiation power shift towards your direction? *

	1	2	3	4	5	
Slightly	<input type="radio"/>	Significantly				

⋮

7. How often do you engage in negotiations with a long-established partner? *

- Daily
- Several times per week
- Few times per month
- Few times per year
- Άλλο...

⋮

8. On a scale 1 to 5 , with 1 being not risky and 5 being very risky : How risky would be adopting a more aggressive negotiation strategy with a long-established partner? *

	1	2	3	4	5	
Not risky	<input type="radio"/>	Very risky				

⋮

9. Which of the following concessions would you be willing to make in order to maintain cooperation with a long-established partner? *

(Please choose 3 options maximum)

- Price
- Quantity ordered
- Delivery terms
- Payment options
- Quality
- Άλλο...

⋮

10. Which are the main characteristics you seek in a new supplier? *

(Please choose 3 options maximum)

- Market reputation and credibility
- Consistency and production capacity
- Quality assurance & food safety practices
- Transparency and traceability
- Effective communication and responsiveness
- Άλλο...

⋮

11. Which re the main characteristics you seek in a new customer? *
(Please choose 3 options maximum)

- Market reputation and credibility
- Financial stability , Payment terms and conditions
- Expected demand volumes and distribution network
- Communication and collaboration
- Potential long-term relationship and increased market share
- Άλλο...

⋮

12. What is your strategic approach in case of a possible negotiation breakdown ? *

- Accept the no deal
- Always concede in order to maintain a long-established relationship
- Always be ready to act accordingly your BATNA (Best Alternative to a Negotiated Agreement)
- Seek common ground , highlight the mutual benefits of an agreement
- Άλλο...

⋮

13. How often do you make a **take it or leave it** offer in case of a negotiation breakdown ? *
(A **take it or leave it** offer is an offer that the other party can either accept or reject. There will be no further negotiations)

- Always
- Depends on the importance of the negotiating partner
- Depends on the negotiating issue
- Never
- Άλλο...

14. On a scale 1 to 5, with 1 being decreased and 5 being increased : How much was your negotiating power affected during the covid pandemic? *

- | | | | | | | |
|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 1 | 2 | 3 | 4 | 5 | |
| Decreased | <input type="radio"/> | Increased |

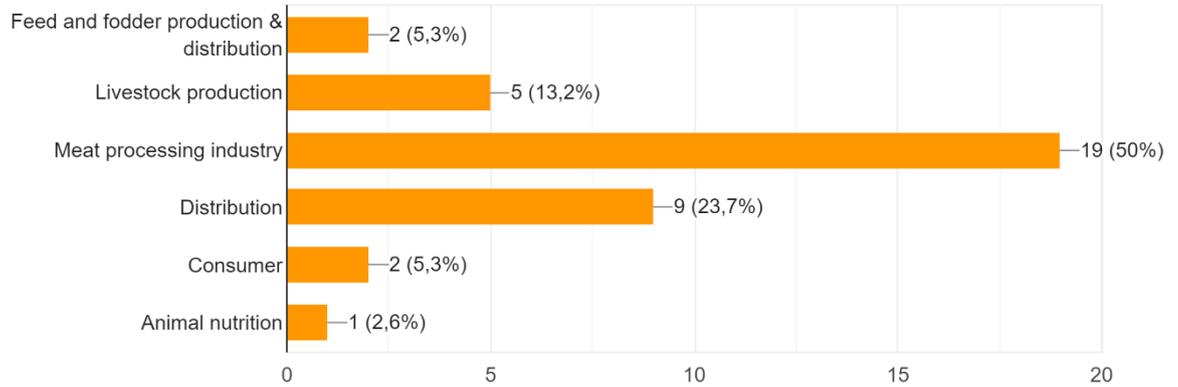
15. Which you consider to be the main factors that would increase your negotiating power? *
(Please choose 3 options maximum)

- Hold more leverage by having strong alternative options
- Relationship building and strategic partnerships
- Market reputation
- Offer a broad variety of quality products / services
- Production capacity and company infrastructure
- Άλλο...

Appendix B: Statistics and results of the questionnaire.

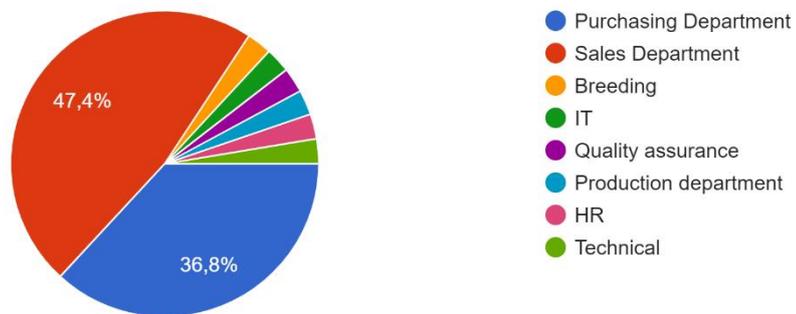
1. In which node of the meat supply-chain do you belong to?

38 απαντήσεις



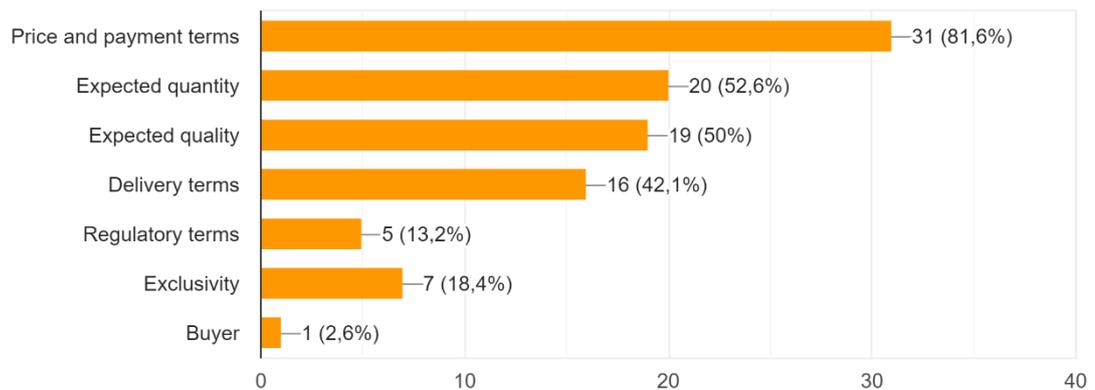
2. In which department of your organization do you belong to ?

38 απαντήσεις



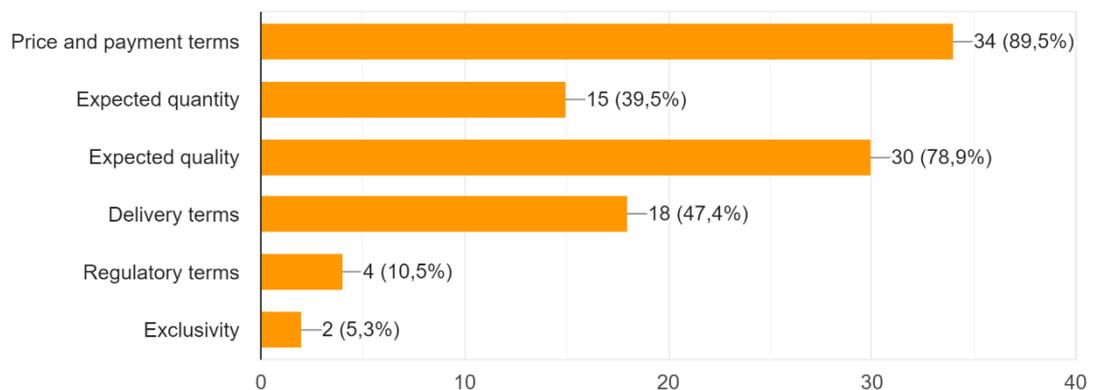
3. When you are a seller, which are the main negotiation topics with your counterparties? (Please choose 3 options maximum)

38 απαντήσεις



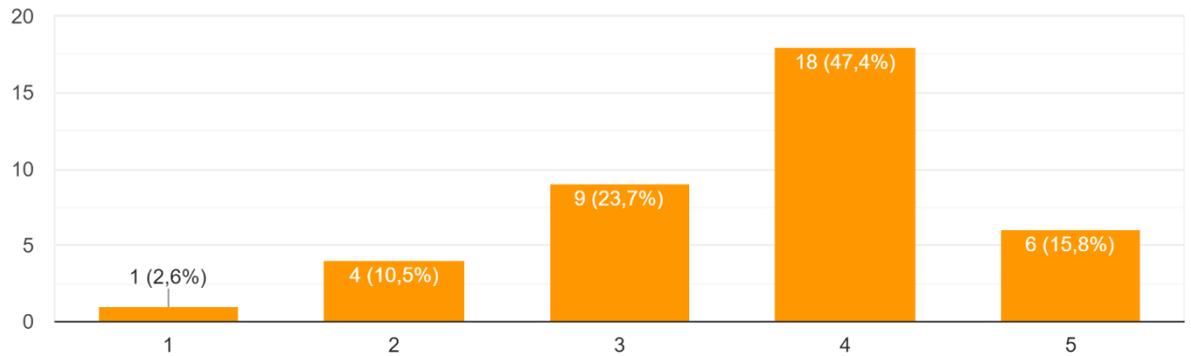
4. When you are a buyer, which are the main negotiation topics with your counterparties? (Please choose 3 options maximum)

38 απαντήσεις



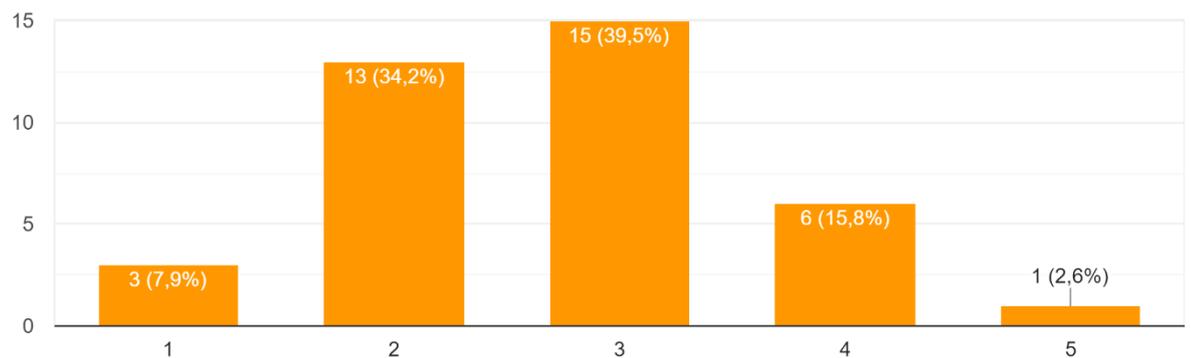
5. On a scale 1 to 5 , with 1 being slightly and 5 being significantly : When negotiating with an organization of a smaller size how much does the negotiation power shift towards your direction?

38 απαντήσεις



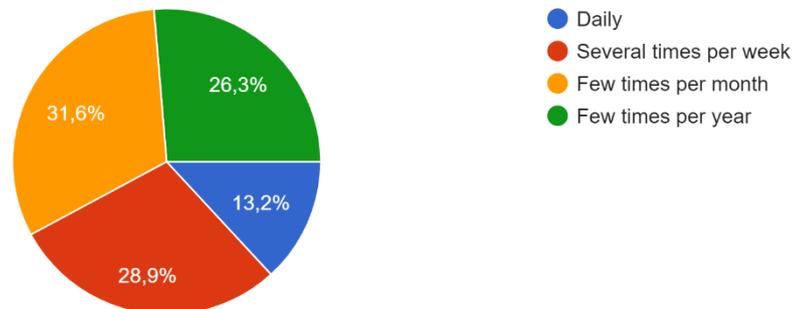
6. On a scale 1 to 5, with 1 being slightly and 5 being significantly : When negotiating with an organization of a bigger size how much does the negotiation power shift towards your direction?

38 απαντήσεις



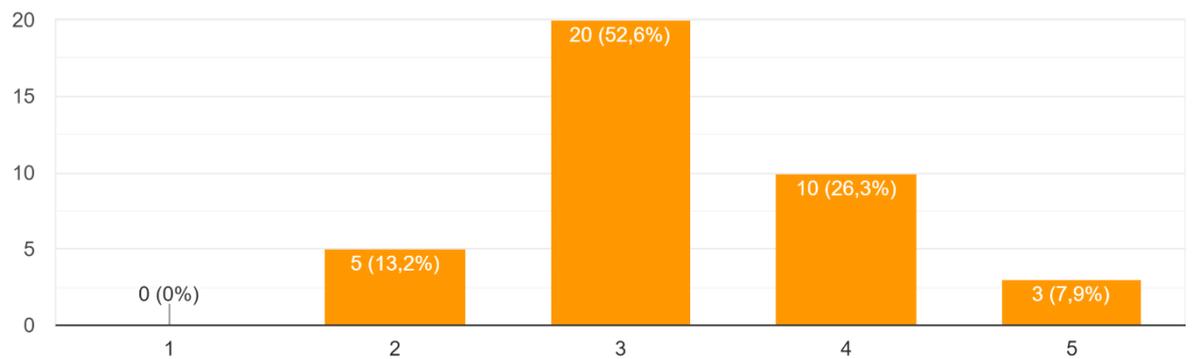
7. How often do you engage in negotiations with a long-established partner?

38 απαντήσεις



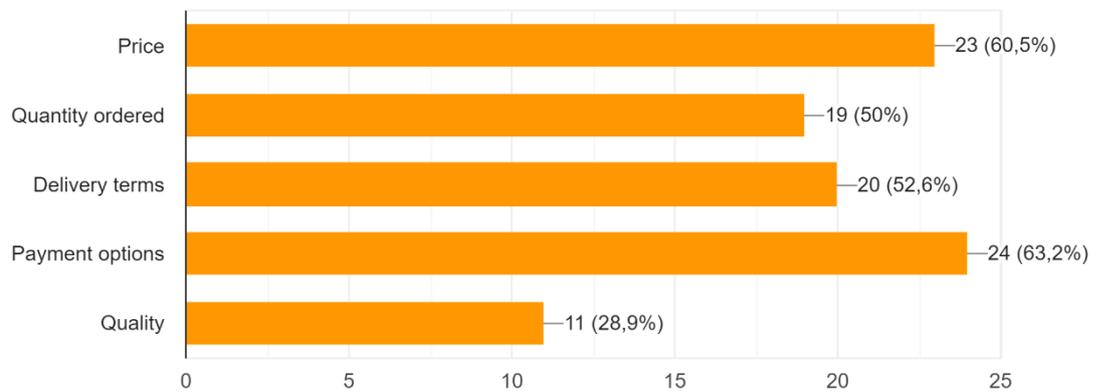
8. On a scale 1 to 5 , with 1 being not risky and 5 being very risky : How risky would be adopting a more aggressive negotiation strategy with a long-established partner?

38 απαντήσεις



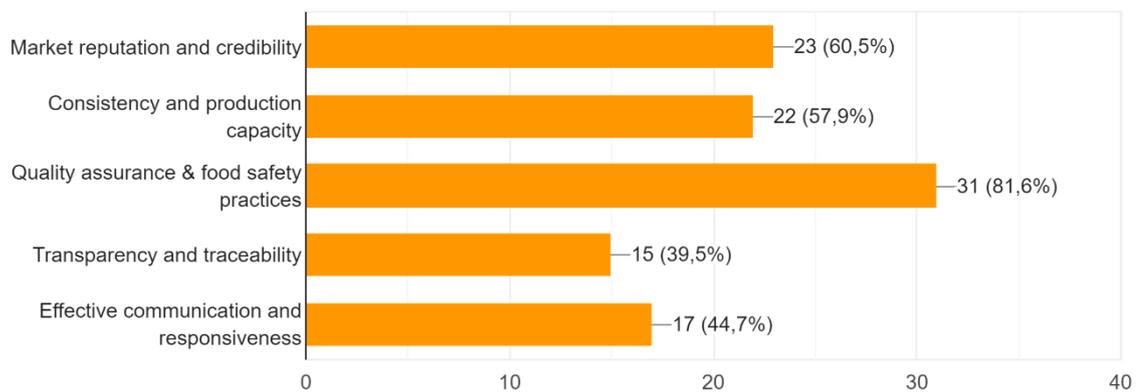
9. Which of the following concessions would you be willing to make in order to maintain cooperation with a long-established partner? (Please choose 3 options maximum)

38 απαντήσεις



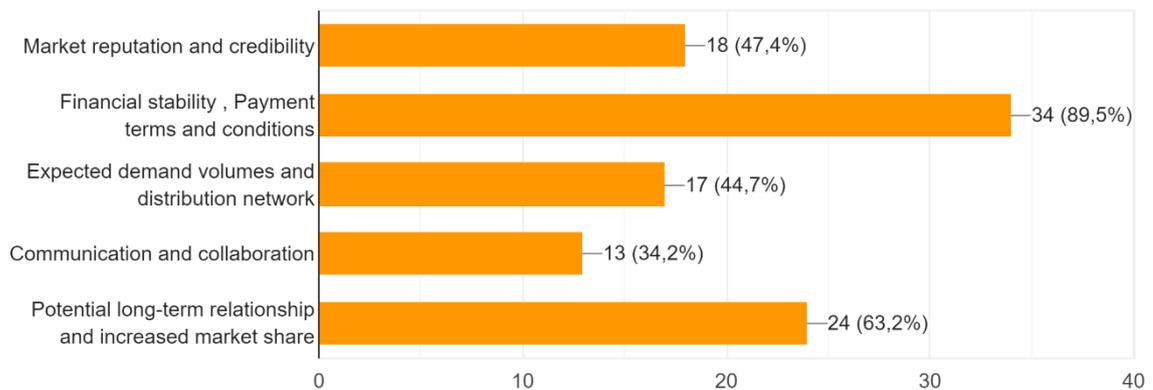
10. Which are the main characteristics you seek in a new supplier? (Please choose 3 options maximum)

38 απαντήσεις



11. Which re the main characteristics you seek in a new customer? (Please choose 3 options maximum)

38 απαντήσεις



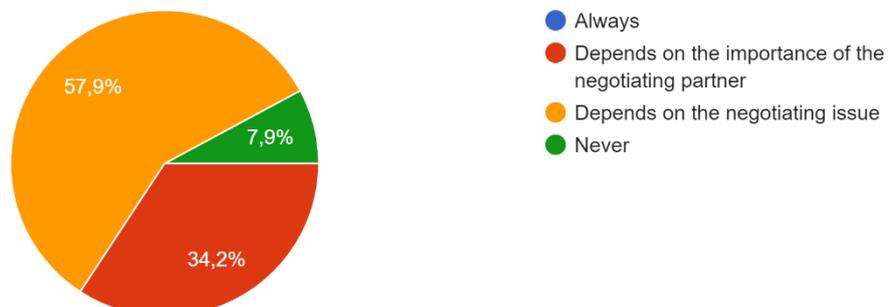
12. What is your strategic approach in case of a possible negotiation breakdown ?

38 απαντήσεις



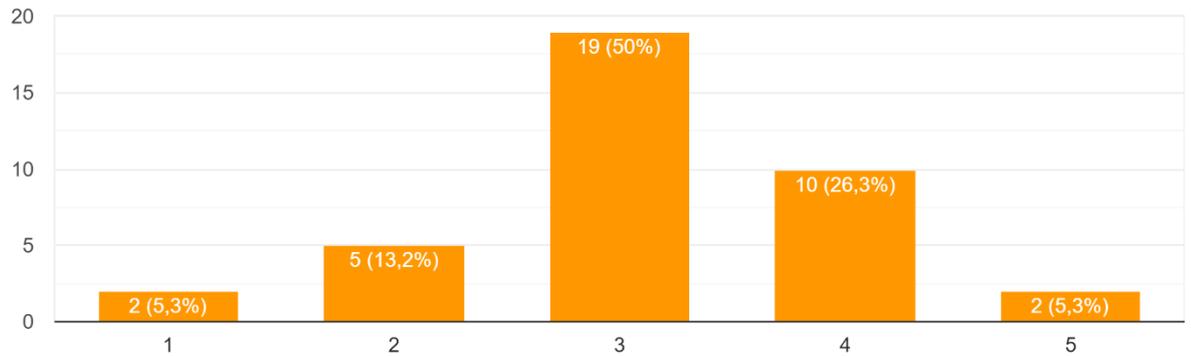
13. How often do you make a take it or leave it offer in case of a negotiation breakdown ? (A take it or leave it offer is an offer that the other party can ...cept or reject. There will be no further negotiations)

38 απαντήσεις



14. On a scale 1 to 5, with 1 being decreased and 5 being increased : How much was your negotiating power affected during the covid pandemic?

38 απαντήσεις



15. Which you consider to be the main factors that would increase your negotiating power? (Please choose 3 options maximum)

38 απαντήσεις

